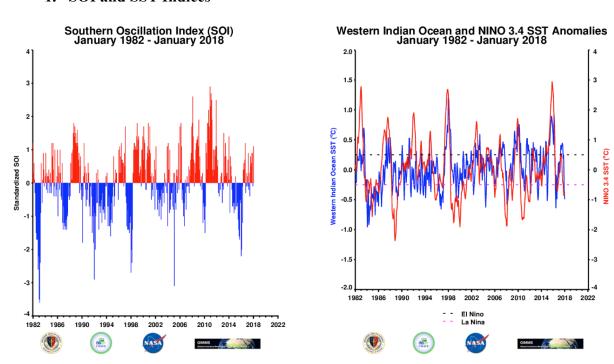
Rift Valley fever Monitor



This section of the report will provide a rolling three month update on a monthly basis of the state of the climatic and ecological indicators used in monitoring areas at risk to RVF activity. These indicators include, global SST anomalies patterns, Equatorial Western Indian Ocean (WIO) and Eastern Pacific Ocean (EPO: NINO 3.4) SST anomalies, Southern Oscillation Index (SOI) and Outgoing Longwave Radiation (OLR) anomalies, Rainfall and anomalies, Normalized Difference Vegetation index anomalies and RVF risk map for Africa and the Arabian Peninsula.

January 2018

1. SOI and SST Indices

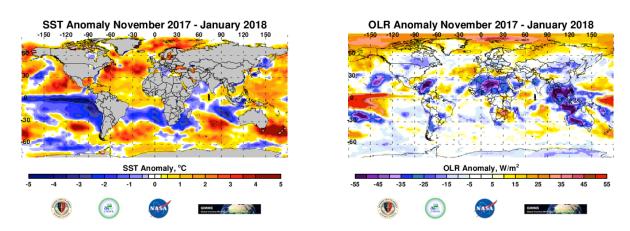


The SOI value in now positive at 1.1 in January increasing from December at -0.1. This in part confirms what other observations show that the entire equatorial Pacific Ocean - atmosphere system is locked in La Niña conditions, which are presently at peak. Sustained positive SOI is correlated with colder than normal ocean temperatures in the eastern tropical Pacific Ocean typical of La Niña events.

Ocean temperatures continue to show sustained colder than normal conditions in most NINO regions from December 2017 to January 2018, in the NINO1&2 region just west of Ecuador and Peru (0°-10°S, 80°-90°W) where the anomaly weakened a little bit but still negative at -0.81°C in January from to -1.38°C in December. The NINO3.4 and NINO4 regions remained negative to various degrees, with NINO3.4 slightly increasing from -0.77°C to -0.75°C and NINO4 decreasing from -0.25°C to -0.27°C. The NINO3 region continued to cool, decreasing from -1.09°C to -1.14°C. Temperatures continue to cool western Indian Ocean, where the

anomaly is now at +0.49°C in January from -0.33°C in December, which is an indicator of a cold pool that has developed in the western equatorial Indian Ocean off the East Africa coast. Overall, the indicators show the ocean-atmosphere system continues to be under La Niña conditions and persisting. The current climate model predictions indicate that La Niña will decay and transition into ENSO-neutral conditions the Northern Hemisphere spring 2018, with a transition to ENSO-neutral (55% chance) most likely during the mid-to-late spring (March – May season). La Niña will continue to affect temperature and precipitation in different ENSO teleconnections regions around the world for the next two months.

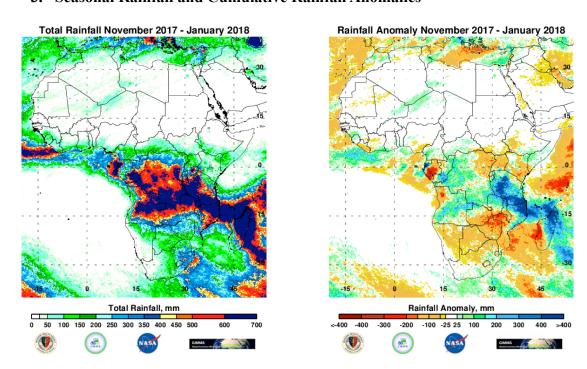
2. Global SST and OLR Anomalies



The November 2017 - January 2018 SST anomalies continue to show sustained cooling in the equatorial Pacific Ocean with cumulative temperatures exceeding -3.5°C along the equator off the South American coast. Western Indian Ocean temperatures continued to cool but remained above normal especially in the southern sector southeast of Madagascar. The southeastern Indian Ocean cold anomaly continues to persist with a maximum value of 3.5°C below normal. The Atlantic and Indian Ocean basins surrounding southern Africa are dominated by negative SST anomalies leading to suppressed convection over the sub-continent. Monthly and weekly SST anomalies can be found here.

Outgoing Longwave Radiation (OLR) anomalies are used here as a proxy for tropical deep convection (rainfall). Reduced convection is shown in yellow to light brown and brown shades and increased/intense convection is shown by shades of blue. The November 2017 - January 2018 OLR anomalies show drier than average conditions throughout the eastern equatorial Pacific coincident with the cold ocean temperatures, with a maximum anomaly of +55 watts per square meter in the central equatorial Pacific east of the dateline. The western equatorial Pacific Ocean particularly the Indonesian Basin and western Australia is dominated by negative OLR anomalies (-55 W/M*2) indicating intense convective activity in this region. In the higher latitudes drier than normal conditions persist, particularly in Alaska, northern Canada and eastern Russia. OLR anomalies also indicate wetter than average conditions in the northern central US plains northwards into Canada, Central America, and the southern portion of South America.

3. Seasonal Rainfall and Cumulative Rainfall Anomalies



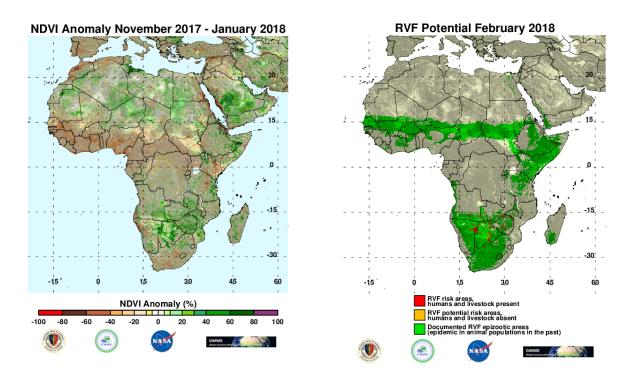
Total rainfall over Africa from November 2017 to January 2018 is now centered south of equator, with maximum totals of 700mm from the western Congo Basin through Tanzania southeastwards into the Indian Ocean. Seasonal totals were near normal over most of the continent however pockets of above normal rainfall located in the Congo Basin but particularly in Tanzania and northern Mozambique with departures as high as +400mm over the three-month period. Areas of rainfall deficits cover Uganda, northeastern Congo and Kenya and over most of southern Africa with anomalies on the order of -300mm over northern Zimbabwe/Zambia and Mozambique trans-border region.

4. NDVI anomalies and RVF Risk Map

November 2017 - January 2018 NDVI anomalies for Africa were closer to normal over most of the continent, with areas of greener than normal conditions persisting northwestern Kenya, eastern Tanzania, and from northeastern Namibia through most of Botswana and northern South Africa, southern Zimbabwe, and southern Mozambique.

The RVF risk map in this report was derived from thresholding NDVI anomaly data to detect areas persistent of above normal NDVI. Periods of widespread and prolonged heavy rainfall lead to flooding of dambos and anomalous green up in vegetation, creating ideal ecological conditions for the emergence of RVF vectors. During November 2017 - January 2018, the RVF

persistence model identifies areas at risk projected for February 2018 in NW Namibia, Botswana and scattered areas Zimbabwe. Given the persistent elevated rainfall conditions in these areas enhanced surveillance is advised areas in February and March.



https://www.ars.usda.gov/southeast-area/gainesville-fl/center-for-medical-agricultural-and-veterinary-entomology/docs/rvf monthlyupdates/